WHAT IS CLAIMED IS:

1. A communication system including:

a transmitter;

a receiver; and

at least one serial link coupled between the transmitter and the receiver, wherein each of the transmitter and the receiver is operable in any selected one of a transmission mode and a mute mode, wherein the transmitter transmits packets of data to the receiver over the link in the transmission mode, transmission of the data over the link is interrupted during the mute mode, and the transmitter and the receiver are configured to undergo transitions between mute mode operation and transmission mode operation in response to warnings, such that the transitions occur only at packet boundaries of the data.

2. The system of claim 1, wherein the transmitter is configured to respond to a warning signal received while operating in the transmission mode, by continuing to transmit the data over the link until the Nth packet boundary after receiving the warning signal and then entering the mute mode before transmitting additional data, where N is a predetermined integer.

3. The system of claim 2, wherein the transmitter saves state upon entering the mute mode.

4. The system of claim 1, wherein the transmitter is configured to respond to a warning signal received while operating in the transmission mode, by continuing to transmit the data over the link until the first packet boundary after receiving the warning signal and then entering the mute mode before transmitting additional data.

5. The system of claim 4, wherein the transmitter saves state upon entering the mute mode.

6. The system of claim 1, wherein the data are video data and the transmitter is configured not to transmit any video synchronization signal over the link while operating in the mute mode.

7. The system of claim 1, wherein the data are encrypted data, the transmitter includes a cipher engine, the receiver includes a second cipher engine, the transmitter is operable in the transmission mode to generate the encrypted data by encrypting first data using the cipher engine, the receiver is operable in the transmission mode to generate decrypted data by decrypting the encrypted data using the second cipher engine, and neither the cipher engine nor the second cipher engine changes state while operating in the mute mode.

8. The system of claim 7, wherein the transmitter is configured to respond to a warning signal received while operating in the transmission mode by allowing the cipher engine to finish encryption of the current packet and then entering the mute mode before transmitting additional encrypted data, and the transmitter is configured not to transmit any signal over the link, while operating in the mute mode, that would affect any packet subsequent to the current packet.

9. The system of claim 7, wherein the receiver is configured to respond to a warning signal received while operating in the transmission mode by allowing the second cipher engine to finish decryption of the current packet and then saving state.

10. The system of claim 7, wherein the encrypted data are encrypted video data and the transmitter is configured not to transmit any video synchronization signal over the link while operating in the mute mode.

11. The system of claim 7, wherein each of the cipher engine and the second cipher engine includes a state machine, wherein operation of the each said state machine is frozen during the mute mode.

12. The system of claim 11, wherein each of the cipher engine and the second cipher engine is configured to assert output data, and the output data of at least the second cipher engine are forced to a predetermined state during the mute mode.

13. The system of claim 12, wherein the output data of each of the cipher engine and the second cipher engine are driven to black during the mute mode.

14. The system of claim 1, wherein the packets of data are frames of encrypted video data, the transmitter and the receiver are configured to undergo the transitions between mute mode operation and transmission mode operation in response to the warnings such that the transitions occur only at frame boundaries of the encrypted video data, the transmitter includes a cipher engine, the receiver includes a second cipher engine, the transmitter is operable in the transmission mode to generate the frames of encrypted video data by encrypting frames of input video data using the cipher engine, the receiver is operable in the transmission mode to generate decrypted video data by decrypting the frames of encrypted video data using the second cipher engine, and neither the cipher engine nor the second cipher engine changes state while operating in the mute mode.

15. The system of claim 1, wherein each of the warnings received by the receiver is determined by a sequence of code words, each of the code words is indicative of a binary bit, each said sequence determines a pattern of binary bits having a number of transitions between adjacent complementary bits, and said number of transitions between adjacent complementary bits is in a predetermined range of numbers.

16. The system of claim 1, wherein the transmitter is configured to transmit at least some of the warnings to the receiver, and each of the warnings transmitted by the transmitter to the receiver is determined by a control packet transmitted by the transmitter.

17. The system of claim 1, wherein the transmitter is configured to transmit at least some of the warnings to the receiver, and the receiver is configured to respond to each of the warnings received from the transmitter by undergoing one of the transitions between mute mode operation and transmission mode operation.

18. The system of claim 17, wherein the packets of data are frames of video data, the transmitter is configured to transmit the frames of video data over at least one video channel of the link during the transmission mode, and the transmitter is

configured to transmit each of the warnings that it transmits to the receiver over the at least one video channel.

19. The system of claim 18, wherein the link is a TMDS-like link, each of the warnings transmitted by the transmitter to the receiver is determined by a sequence of transmitted code words indicative of binary control bits, and each said sequence determines a pattern of the binary control bits.

20. The system of claim 18, wherein each of the warnings transmitted by the transmitter to the receiver is determined by a sequence of transmitted code words indicative of binary bits, and each said sequence determines a pattern of the binary bits.

21. The system of claim 17, wherein the packets of data are frames of video data, the transmitter is configured to transmit the frames of video data over at least one video channel of the link during the transmission mode, and the transmitter is configured to transmit each of the warnings that it transmits to the receiver other than over the at least one video channel.

22. The system of claim 1, wherein the data are video data, each of the transmitter and the receiver employs a video clock during the transmission mode, and the video clock remains active for a predetermined time commencing at the start of each period of mute mode operation, where the predetermined time is such that the video clock will remain stable and accurate during said predetermined time without adjustment of the video clock.

23. The system of claim 1, wherein the packets of data are frames of video data, and the transmitter and the receiver are configured to undergo transitions between mute mode operation and transmission mode operation in response to the warnings such that the transitions occur only at frame boundaries of the video data.

24. The system of claim 1, also including:

a source coupled to the transmitter and configured to assert packets of input data to the transmitter, wherein some of the warnings are re-connect warnings, and the transmitter is configured to respond to each of the re-connect warnings received during

mute mode operation by accepting a stream of the input data from the source, identifying a packet boundary in said stream, and resuming transmission of the data over the link upon identifying the packet boundary.

25. The system of claim 24, wherein the stream of the input data is a video data stream including sync signals, the source is a video source, the packet boundary is a frame boundary, and while the transmitter receives an initial portion of the video data stream from the video source but before the transmitter identifies the frame boundary in said video data stream, neither the transmitter nor the receiver changes state in a manner that depends on polarity of any of the sync signals of said video data stream.

26. The system of claim 24, wherein the data are encrypted data, the transmitter includes a cipher engine, the receiver includes a second cipher engine, the transmitter is operable in the transmission mode to generate the encrypted data by encrypting the input data from the source using the cipher engine, the receiver is operable in the transmission mode to generate decrypted data by decrypting the encrypted data using the second cipher engine, and the output of the second cipher engine is driven to a predetermined state during the mute mode.

27. The system of claim 1, wherein when the system is to operate in a second transmission mode following a first transmission mode, a first mute mode has occurred after the first transmission mode and before the second transmission mode, and the data to be transmitted over the link by the transmitter during the second transmission mode have different timing than the data transmitted over the link by the transmitter during the first transmission mode, the transmitter is configured to transmit the data with artificial timing signals during at least an initial portion of the second transmission mode, wherein the artificial timing signals are generated from timing parameters of the data at the end of the first transmission mode and timing parameters of the data at the end of the first mute mode.

28. The system of claim 1, wherein the data are video data, and when the system is to operate in a second transmission mode following a first transmission mode, a first mute mode has occurred after the first transmission mode and before the second transmission mode, and the video data to be transmitted over the link by the transmitter

during the second transmission mode have different timing than the video data transmitted over the link by the transmitter during the first transmission mode, the transmitter is configured to transmit the video data with artificial timing signals during at least an initial portion of the second transmission mode, wherein the artificial timing signals are generated from timing parameters of the video data at the end of the first transmission mode and timing parameters of the video data at the end of the first mute mode.

29. The system of claim 28, wherein the transmitter is configured to generate the artificial timing signals by interpolating between the timing parameters of the video data at the end of the first transmission mode and the timing parameters of the video data at the end of the mute mode.

30. A transmitter, for use in a communication system including a receiver and at least one serial link coupled to the receiver, wherein the transmitter is operable alternately in a transmission mode in which the transmitter sends packets of encrypted data to the receiver over the serial link when the transmitter is coupled to the serial link, and in a mute mode in which encrypted data transmission is interrupted, said transmitter including:

a cipher engine coupled to receive input data, and configured to generate the encrypted data by encrypting the input data during the transmission mode, and to save state during the mute mode; and

control circuitry, coupled to the cipher engine and to receive warning signals, and configured to cause the cipher engine to undergo transitions between operation in the transmission mode and operation in the mute mode in response to the warning signals, such that the transitions occur only at packet boundaries of the encrypted data.

31. The transmitter of claim 30, wherein the input data are video data, the cipher engine is configured to generate encrypted video data by encrypting the input data during the transmission mode, and the control circuitry is configured to cause the cipher engine to undergo the transitions between operation in the transmission mode and operation in the mute mode such that the transitions occur only at frame boundaries of the encrypted video data.

32. A receiver, for use in a communication system including a transmitter and at least one serial link coupled to the transmitter, wherein the receiver is operable alternately in a transmission mode and in a mute mode, wherein the receiver receives packets of encrypted data transmitted by the transmitter over the serial link during the transmission mode when the receiver is coupled to the serial link, said receiver including:

a cipher engine, coupled and configured to receive the encrypted data when the receiver is coupled to the serial link, to generate decrypted data by decrypting the encrypted data during the transmission mode, and to save state during the mute mode; and

control circuitry, coupled to the cipher engine, and coupled and configured to receive warning signals transmitted over the serial link when the receiver is coupled to said serial link, and to cause the cipher engine to undergo transitions between operation in the transmission mode and operation in the mute mode in response to the warning signals such that the transitions occur only at packet boundaries of the encrypted data.

33. The receiver of claim 32, wherein the encrypted data are encrypted video data, the cipher engine is configured to generate decrypted video data by decrypting the encrypted video data during the transmission mode, and the control circuitry is configured to cause the cipher engine to undergo the transitions between operation in the transmission mode and operation in the mute mode such that the transitions occur only at frame boundaries of the encrypted video data.

34. A method for transmitting data from a transmitter to a receiver over a serial link, said method including the steps of:

(a) operating the transmitter and the receiver in a transmission mode in which the transmitter transmits packets of data to the receiver over the link; and

(b) after step (a), and in response to at least one warning, operating the transmitter and the receiver in a mute mode in which transmission of the data over the link is interrupted at a packet boundary of the data and remains interrupted after occurrence of said packet boundary.

35. The method of claim 34, also including the step of:

(c) after step (b), and in response to at least one subsequent warning, operating the transmitter and the receiver in a second transmission mode commencing at another packet boundary of the data, wherein the transmitter transmits additional packets of data to the receiver over the link during the second transmission mode.

36. The method of claim 34, wherein during step (b), the transmitter responds to the at least one warning by continuing to transmit the data over the link until the Nth packet boundary after receiving the at least one warning and then entering the mute mode before transmitting additional data, where N is a predetermined integer.

37. The method of claim 36, wherein the transmitter saves state upon entering the mute mode.

38. The method of claim 34, wherein during step (b), the transmitter responds to the at least one warning by continuing to transmit the data over the link until the first packet boundary after receiving said at least one warning and then entering the mute mode before transmitting additional data.

39. The method of claim 38, wherein the transmitter saves state upon entering the mute mode.

40. The method of claim 34, wherein the transmitter transmits frames of video data to the receiver over the link during step (a), and during the mute mode, transmission of the video data over the link is interrupted at a frame boundary of the video data and remains interrupted after occurrence of said frame boundary.

41. The method of claim 40, also including the step of:

(c) after step (b), and in response to at least one subsequent warning, operating the transmitter and the receiver in a second transmission mode commencing at another frame boundary of the video data, wherein the transmitter transmits additional frames of video data to the receiver over the link during the second transmission mode.